

reference. --, and

Page 1, line 31, delete "the"; line 39, insert --of-- after "sequence".

Page 3, line 11, change "VLSIPS" to --VLSIPS™ Technology--; insert after "VLSIPS™ Technology" --(Very Large Scale Immobilized Polymer Synthesis)--.

applied *a2*
Page 3 before the paragraph starting on line 16, insert the paragraph: --According to one aspect of the masking technique, the invention provides an ordered method for forming a plurality of polymer sequences by sequential addition of reagents comprising the step of serially protecting and deprotecting portions of the plurality of polymer sequences for addition of other portions of the polymer sequences using a binary synthesis strategy.--

Page 6, line 13, delete "are".

Page 7, line 22, delete "upon".

Page 8, line 4, change "VLSIPS" to --VLSIPS™ Technology--; line 5, delete "peptide" and insert --nucleotide--; line 6, change "VLSIPS" to --VLSIPS™ Technology--; line 7, delete "dipeptide" and insert --nucleotide--; line 8, change "VLSIPS" to --VLSIPS™ Technology--.

Page 12, line 11, change "VLSIPS Substrates" to --VLSIPS™ Technology--; line 15, change "(VLSIPS)" to --(VLSIPS™)--; line 35, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--.

Page 13, line 6, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; lines 6-7, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned-- and delete "attorney docket number 11509-28 (automated VLSIPS)"; line 30, insert in the blank spaces --07/624,120, now abandoned--; delete "attorney docket number 11509-28 (automated VLSIPS)"; line 31, insert in the blank spaces after "U.S.S.N." --Dower et al. (1995) U.S. Pat. No. 5,427,908--; lines 31-32, delete "attorney docket number 11509-16 (sequencing by synthesis)".

Page 14, line 28, after "112:", delete "6997" and insert --6397--; insert --6399-- in the blank space after "6997".

Page 15, line 11, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; lines 14-15, insert in the blank spaces after "U.S. S.N." --07/624,120, now abandoned-- and delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 20, line 12, after "07/362,901" insert --, now abandoned-- and delete " (VLSIPS parent)" and delete "U.S.S.N. 07/492,462" and insert --Pirrung et al. (1992) U.S. Pat. No.

~~5,143,854--; line 13, delete "(VLSIPS CIP)" and also delete "(caged biotin parent)" and delete "Serial No. 07/612,671" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--; line 14, delete "(caged biotin CIP)"; line 36, after "07/362,901" insert --, now abandoned--; line 37, delete "U.S.S.N. 07/492,462" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854-- and delete "(VLSIPS parent)"; line 37, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; line 37, delete "(VLSIPS CIP)"; lines 37-38, delete "attorney docket number 11509-28 (automated VLSIPS)".~~

~~Page 21, line 11, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 11-12, delete "attorney docket number 11509-28 (automated VLSIPS)".~~

~~Page 22, line 3, change "statistically" to --statistical--; line 24, change "Khropko" to --Khrapko--.~~

~~Page 23, line 12, change "VLSIPS" to --VLSIPS™ Technology--.~~

~~Page 24, line 24, insert --the-- after "that".~~

~~Page 26, line 30, change "way," to --way--.~~

~~Page 31, line 27, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 27-28, delete "attorney docket number 11509-28 (automated VLSIPS)".~~

~~Page 33, line 14, after "07/435,316" insert --, now abandoned-- and delete "(caged biotin parent)" and delete "Serial No. 07/612,671" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--; line 15, delete "(caged biotin CIP)".~~

~~Page 34, line 14, change "affixed" to --affixing--; insert --them-- before the phrase "to a definable position"; line 16, after "07/362,901" insert --, now abandoned--; lines 16-17, delete "(VLSIPS parent)"; line 17, delete "Serial No. 07/492,462" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; and delete "(VLSIPS CIP)".~~

~~Page 35, line 4, insert --through the-- after "particularly"; line 9, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 10, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 10-11, delete "attorney docket number 11509-28 (automated VLSIPS)"; line 11, delete "U.S.S.N. 07/612,671 (caged biotin CIP)" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--; line 16, delete "U.S.S.N. 07/492,462" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 17, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; line 17, delete "(VLSIPS CIP)"; lines 17-18, delete "attorney docket number 11509-28 (automated VLSIPS)"; line 30, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and~~

insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 31, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 31-32, delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 36, line 9, change "are" to --is--; line 21, insert in the blank spaces --07/624,120, now abandoned--; delete "attorney docket number 11509-28 (automated VLSIPS)"; line 32, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; line 33, delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 37, line 12, change "converse" to --confer--; line 30, in the blank space after "6333--" insert --6335--; line 31, insert in the blank space --196--.

Page 38, line 15, insert --the-- before "target".

Page 39, line 14, change "it will" to --will allow the probe to--; line 16, change "close" to --closely--.

Page 42, line 21, insert --such-- before "that"; line 26, insert --such-- before "that"; line 31, change "VLSIPS" to --VLSIPSTM Technology--; line 35, change "VLSIPS" to --VLSIPSTM Technology--.

Page 41, line 22, delete "arylammonium" and insert --alkylammonium--; line 29, delete "arylammonium" and insert --alkylammonium--.

Page 42, line 37-38, delete "U.S.S.N. 07/492,462" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--.

Page 43, line 9, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; line 9, delete "(VLSIPS CIP)"; lines 9-10, delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 47, line 38, delete "length of the".

Page 48, line 12, change "individual" to --individually--; line 38, insert in the blank spaces after "U.S.S.N." --07/626,730--.

Page 48, line 38 and page 49, line 1, delete "attorney docket number 11509-26 (sequencing by synthesis)".

Page 49, line 12, in the blank space after "341-" insert --347--.

Page 50, line 26, change "VLSIPS" to --VLSIPSTM Technology--.

Page 51, line 4, change "VLSIPS" to --VLSIPSTM Technology--; line 12, change "complex, it" to --complex. It--.

Page 52, line 13, delete the first occurrence of "expressed".

Page 55, line 3, insert --and-- after "susceptibilities".

Page 56, line 7, change "fingerprinted" to --fingerprinting--; change "as in" to --an--; line 8, change "mosaism" to --mosaicism--.

Page 58, line 4, delete the sentence "Again, the target sequences may be desired to be fragmented"; insert the sentence --Again, it may be desirable to fragment the target sequences--.

Page 60, line 19, change "VLSIPS" to --VLSIPS™ Technology--; line 33, delete the second occurrence of "the".

Page 62, line 3, insert --a-- after "provides"; line 10, change "to define" to --in defining--; line 20, change "as" to --are--.

Page 63, line 8, change "upon" to --by--; line 29, change "amendable" to --detectable--; line 38, change "present" to --presently available--.

Page 64, line 1, change "screen" to --screens--; line 17, change "also is" to --is also--; lines 33-34, delete "U.S.S.N. 07/492,462" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 34, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned-- and delete "(VLSIPS CIP)"; lines 34-35, delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 65, line 3, change "VLSIPS" to --VLSIPS™ Technology--; line 9, delete "U.S.S.N. 07/462,492 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 10, insert in the blank spaces --07/624,120, now abandoned--; delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 66, line 36, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 36-37, delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 67, line 14, change "then" to --them--; line 33, change "VLSIPS" to --VLSIPS™ Technology--.

Page 68, line 1, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 2, insert in the blank spaces --07/624,120, now abandoned-- and delete "attorney docket number 11509-28 (automated VLSIPS)"; line 7, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 7-8, delete "attorney docket number 11509-28 (automated VLSIPS)"; line 33, delete "U.S.S.N. 07/492,462 (automated VLSIPS)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 34, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines

34-35, delete "attorney docket number 11509-28 (automated VLSIPS)"; line 38, change "VLSIPS" to --VLSIPS™ Technology--.

Page 70, line 2, insert --,-- after "Fig. C"; line 6, change "anaines" to --amines--.

Page 71, line 24, change "have been" to --include, for example--.

Page 73, line 12, insert --,-- after "functionalized"; line 13, insert --,-- after "(see example below)"; line 33, change "group" to --groups--; line 34, insert --,-- after "acetate".

Page 74, line 3, change "!" to --,--; line 16, change "Related to" to --With respect to--; line 30, change "!" to --,--.

Page 75, line 4, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; line 5, delete "attorney docket number 11509-28"; line 21, after "07/435,316" insert --, now abandoned--; lines 21-22, delete "(caged biotin parent)"; line 22, delete "U.S.S.N. 07/612,671 (caged biotin CIP)" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--; line 32, change "VLSIPS" to --VLSIPS™ Technology--; line 34, change "'standard VLSIPS'" to --"standard VLSIPS™ Technology"--; lines 34-35, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned-- and delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 77, line 2, delete "in our labs"; line 7, change "Brosystems" to --Biosystems--.

Page 78, line 27, delete "U.S.S.N. 07/612,671 (caged biotin CIP)" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--.

Page 79, line 31, change "VLSIPS" to --VLSIPS™ Technology--.

Page 81, line 12, insert --be-- after "may"; line 33, change "Cell" to --In addition to cell--.

Page 82, line 11, change "VLSIPS" to --VLSIPS™--; line 19, change "VLSIPS" to --VLSIPS™ Technology--.

Page 84, line 27, delete ")".

Page 86, line 30, change "ficoerythrin" to --phycoerythrin--; line 32, change "primary" to --primarily--.

Page 89, line 16, delete "U.S.S.N. 07/649,642 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 17, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 17-18, delete "attorney docket number 11509-28 (automated VLSIPS)"; line 25, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 25-26, delete "attorney docket number 11509-28 (automated VLSIPS)".

~~Page 90, line 21, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 21-22, delete "attorney docket number 11509-28 (automated VLSIPS)"; line 36, insert --a-- between "of" and "vast".~~

~~Page 91, line 7, delete "up".~~

~~Page 94, line 29, change "VLSIPS" to --VLSIPS™ Technology--; line 31, change "simply" to --simplify--.~~

~~Page 95, line 15, insert --to-- after "adjacent".~~

~~Page 96, line 20, insert --for-- after "sequentially".~~

~~Page 97, line 6, delete "of".~~

~~Page 98, line 26, change "VLSIPS" to --VLSIPS™--; lines 28-29, delete "Serial No. 07/612,671 (caged biotin CIP)" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--; line 34, change "aa" to --a--.~~

~~Page 100, line 12, change "An" to --In--.~~

~~Page 101, line 10, change "preventative" to --preventive--.~~

~~Page 103, line 38, delete "(VLSIPS parent)" and add --, now abandoned-- after "1989"; line 39, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 40, after "07/435,316" insert --, now abandoned--; and delete "(caged biotin)"; line 41, delete "Serial No. 07/612,671 (caged biotin CIP)" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--; line 43, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 43-44, delete "attorney docket number 11509-28 (automated VLSIPS)"; line 45, insert in the blank spaces --07/626,730--; lines 45-46, delete "attorney docket number 11509-26 (sequencing by synthesis)".~~

~~Page 104, line 34, change "0-nitrovertryl" to --0-nitroveratryl--; line 35, change "0-nitrovertryl" to --0-nitroveratryl--.~~

~~Page 105, line 31, change "VLSIPS" to --VLSIPS™ Technology--.~~

~~Page 107, line 5, insert --to-- after "added"; line 13, delete "a".~~

~~Page 111, line 34, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 35, insert in the blank spaces after "U.S.S.N." --07,624,120, now abandoned--; lines 35-36, delete "attorney docket number 11509-28 (automated VLSIPS)".~~

~~Page 112, line 23, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; and insert in the blank spaces after "U.S.S.N."~~

--07/624,120, now abandoned--; lines 23-24, delete "attorney docket number 11509-28 (automated VLSIPS)".

Page 114, lines 21-22, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 22, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 22-23, delete "attorney docket number 11509-28".

Page 115, lines 10-11, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 23, insert in the blank spaces after "U.S.S.N." --07/624,120, now abandoned--; lines 23-24, delete "attorney docket number 11509-28"; line 36, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--.

Page 116, line 8, change "durapore" to --DuraporeTM--.

Page 117, lines 15-16, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--;

Page 118, line 14, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--; line 22, change "NOVC" to --NVOC--; line 29, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat No. 5,143,854--.

Page 120, line 8, delete "that"; line 35, delete "U.S.S.N. 07/492,462 (VLSIPS CIP)" and insert --Pirrung et al. (1992) U.S. Pat. No. 5,143,854--.

Page 124, line 26, after "07/435,316" insert --, now abandoned--; line 27, delete "(caged biotin parent)"; lines 27-28, delete "U.S.S.N. 07/612,671 (caged biotin TRIP)" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--.

Page 126, line 2, change "are" to --is--.

Page 127, line 3, delete "U.S.S.N. 07/612,671 (caged biotin CIP)" and insert --Barrett et al. (1993) U.S. Pat. No. 5,252,743--.

Page 131, line 4, insert --and-- after "recognition".

Page 133, line 2, insert --to-- after "environment".

Page 134, line 7, change "her" to --their--.

Page 135, line 37, change "VLSIPS" to --VLSIPSTM Technology--.

Page 136, line 22, change "VLSIPS" to --VLSIPSTM Technology--.

Page 144, delete the paragraph starting on line 15 with "This application", and ending on line 30 with "herein by reference".

IN THE CLAIMS:

Cancel claim 1 without prejudice and add the following new claims.

A3

--26. A collection of beads comprised of different beads;
wherein a plurality of the beads have at least one polymer of a specific sequence attached thereto; and
wherein a plurality of the beads having at least one attached polymer are coded by an encoding system; and, the encoding system indicates the specific sequence of the polymer attached to a single bead.

27. The collection of claim 26, wherein the polymer attached to a single bead is an oligonucleotide having a given length; and wherein the oligonucleotide attached to a single bead is selected from the group consisting of all possible oligonucleotide sequences having the same number of nucleotides.

28. The collection of claim 27, wherein at least about 20% of all possible oligonucleotide sequences having the same number of nucleotides are attached to a different single bead.

29. The collection of claim 27, wherein at least about 70% of all possible oligonucleotide sequences having the same number of nucleotides are attached to a different single bead.

5 30. The collection of claim ²⁷~~29~~, wherein the oligonucleotide sequences having the same number of nucleotides are at least 5 nucleotides long.

6 31. The collection of claim ²⁷~~29~~, wherein the oligonucleotide sequences having the same number of nucleotides are 8 nucleotides long.

5 30/309
4 15/287.3 138

A